SECRET

15 January 1957

MEMORANDUM

TO: Chairman, GMIC

FROM: Intelligence Consultant to GMIC [redacted] 25X1C

SUBJECT: Weekly Report on [redacted] 25X1C

25X1C

I. The following is the first of what I propose to be a weekly series of reports on what is going on in connection with [redacted]. The information will not normally be novel, inasmuch as it will already have gone home in the form of ANA cables, EG reports or other memoranda submitted by the Chief, REG; nor will it attempt to go into detail. However, I shall attempt to draw your attention to items I think are of particular interest to GMIC and the natural corollary might be for GMIC to forward suggestions to me; it being understood, of course, that action on such suggestions must depend on the local situation.

II. There have been five EG reports from single source of particular interest.

A. 4 Jan 57 -- Describes air-to-air missile receiver.
B. 28 Dec 56 — Ties in personalities with specific elements of B-200 project. Describes 90 Germans.
C. 27 Dec 56 -- Furnishes replacement for 6 pages of text and 9 pages of figures for following report (item d).
D. 14 Dec 56 -- Replete with block diagrams and description B-200 system. Equivalent detail on radar, command transmitter and receiver.
E. 30 Nov 56 -- Description of employment in USSR, Komet, B-200, air-to-air missile and mention of partial planning for shore-to-ship missile.

III. Each report briefly described below:

A. EG-1765, REG-359, 4 January 1957. Ten page report on X-band air-to-air missile receiver. Spring of 1952 source saw 30 to 50 prototype receivers at 228 Leningradskoye shosse. Soviet officer with whom he had worked on Komet X-band air-to-surface missile guidance system asked for source's temporary loan from B-200 work to the Soviet air-to-air missile receiver project. Apparently considerable pressure to complete project.

1. Group working on the project was having difficulties with the detector of the missile receiver. Source suggested suitable test equipment be constructed to check and overcome difficulties. Reports in some detail on circuitry and functioning of receiver, giving functional block diagram of air-to-air missile receiver and detailed pulse trains and wave forms at key circuit points.

INDEX

SECRET

2. Missile designed to receive pulse modulated signals from conical scanning radar in launching aircraft and convert them into error signals which when applied to control surfaces of missile direct it to target. Frequency about 3 centimeters, PRF 5000 CPS, antenna rotation rate about 30 CPS. System was based upon synchronization of PRF and antenna rotation rate. Radar signal for the beam riding missile consisted of a pulse modulated RF with double pulses occuring at 0 degrees, 90 degrees, 180 degrees and 270 degrees of antenna rotation. Second pulse of each double pulse spaced one, two, three and four microseconds after regular pulses at 0, 90, 180 and 270 degrees respectively.

3. Source does not know whether system was actually used.

B. EG-1757, REG-359, 28 December 1956, 27 pages. Ties in personalities with specific elements of B-200 project: power supplies; controls; trajectory simulator; electro-mechanical computer; electronic guidance and controls; (a) command channel, (b) electronic computer, (c) coordinates cabinet, (d) mathematics, (e) technicians/mechanics; design office and workshops. A total of 90 [redacted] are listed with a descriptive paragraph of each person and giving source's view of how each fitted into project. 25X1C

C. EG-1762, correct, 27 December 1956, 16 pages. Supplies replacement pages to EG-1762 dated 14 December 1956 as follows: 8, 14, 15, 21, 22 and 23 (text) and 4, 5, 10, 12, 13, 18, 20, 29 and 34 (figures).

D. EG-1762, REG-359, 14 December1956, 34 pages. Replete with detailed block diagrams, pulse trains and associated functional and detailed description of the B-200 surface-to-air missile system. The radar, coordinates cabinet, command transmitter and command receiver each (repeat each) receive detailed treatment. Command transmitter and receiver discussion is on 5 pages with 2 pages for command transmitter wave forms and 1 page showing a detailed block diagram of the command transmitter with 3 inputs: 1st command to limiter, 2nd command to limiter and 3rd command to electronic switch.

E. EG-1753, REG-359, 30 November 1956, 27 pages. Included in a chronological description of employment in the USSR are descriptions of the following: Komet air-to-surface missile guidance system, ground-to-air missile guidance system, air-to-air missile receiver and partial planning for a shore-to-ship missile system. Report includes a general description and technical details of the B-200 system and outlines scope of further interrogation on B-200: general description (present report), block diagrams and detailed circuit diagrams.

Above source now being interrogated in detail on test equipment which he had constructed in Soviet laboratory to check and solve difficulties encountered on air-to-air missile receiver. This will amplify on aspects of the missile receiver covered in EG-1765 as well as describe test equipment employed. Source has also been working on a more detailed description of selector circuits in the coordinates cabinet.

25X1C

Source REG-360 indicates that missile control equipment fabricated in his workshop and taken out for test was definitely for [redacted] which is clearly interpreted to associate this missile control equipment with the B-200 surface-to-air missile guidance system.

Second and third sources are being interrogated on the organizational structure at 228 Leningradskoye shosse.

25X1A [redacted]